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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,956	11/15/2000	Nobutaka Miyake	35.C14928	8490
5514	7590	10/04/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			PATEL, SHEFALI D	
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NEW YORK, NY 10112			PAPER NUMBER	

2621

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/711,956

Applicant(s)

MIYAKE, NOBUTAKA

Examiner

Shefali D Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 43 and 44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 7, 2004 has been entered.

Response to Amendment

2. The amendment was received on July 6, 2004 and has been made of record.
3. Objection to the claim 42 has been overcome and withdrawn.
4. Claims 43-44 are withdrawn from consideration in result of a restriction election made on March 26, 2004.

Response to Arguments

5. Applicant's arguments filed on July 6, 2004 have been fully considered but they are not persuasive. Applicant argue on page 14 of the remarks filed on July 6, 2004 that Inoue et al. "does not take into account that the image in which information is embedded is to be printed and does not disclose or suggest a pseudo gradation process according to the predetermined information."

The examiner disagrees.

The examiner, in the final action mailed on April 6, 2004 on page 5, stated that "Inoue does not expressly disclose outputting the image to a printer, which outputs the image as a print and for causing in a unit of the image area to generate a pattern in which a dot arrangement is

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different according to the predetermined information.” This is why the examiner had brought in a reference by Hayashi (US 6,535,616).

The examiner stated on page 5, “Hayashi discloses outputting the image to a printer, which outputs the image as a print (Hayashi: col. 11 lines 23-30) and for causing in a unit of the image area, to generate a pattern in which a dot arrangement is different according to the predetermined information (Hayashi: col. 10 lines 8-30). Inoue and Hayashi are combinable because they are from the same field of endeavor, i.e., embedding information in the image. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Hayashi with Inoue. The motivation for doing so is that by generating a pattern in which a dot arrangement is different according to the predetermined information will reduce the deterioration in the image quality as suggested by Hayashi at col. 10 lines 13-16.”

Applicant state at bottom of page 14 of the remarks the definition of a pseudo gradation process to be a process for printing. Please note that Hayashi discloses a pseudo gradation process (i.e., a process for printing) as described in the above paragraph.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-16, 18-36, and 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (USPN 6,477,276) (hereinafter, "Inoue") in view of Hayashi, et al. (USPN 6,535,616) (hereinafter, "Hayashi").

With regard to **claim 1** Inoue discloses an image processing apparatus which embeds predetermined information in an image (See, col. 38 lines 10-11), the apparatus comprising: input means for entering the image (signal 71 in Fig. 1 is the input means which inputs the image in the system. Col. 38 lines 25-26); division means for dividing the entered image into plural image areas (division portion 12 dividing the image in plurality of blocks, col. 38 lines 30-34); pseudo gradation process means for quantizing the image areas divided by said division means (quantization means 13, Fig. 1 and col. 38 lines 34-40), utilizing error diffusion method (quantization means goes to the replacement portion 14 to change the condition (i.e., values) of the quantization values depending on the embedding information, col. 38 lines 34-43. Later, Inoue discloses the error calculation portion 65 at col. 60 lines 37-45); and control means for controlling (control means include of element 14, 15 and 16 in Fig. 1), in a unit of the image area, the quantization condition by said pseudo gradation process means according to the predetermined information on the image output as the print (these three units control the quantization value on the basis of the information to be embedded in the block. See, col. 38 lines 40-56). Inoue does not expressly disclose outputting the image to a printer, which outputs the image as a print and for causing in a unit of the image area, to generate a pattern in which a dot arrangement is different according to the predetermined information. Hayashi discloses outputting the image to a printer, which outputs the image as a print (Hayashi: col. 11 lines 23-30) and for causing in a unit of the image area, to generate a pattern in which a dot arrangement

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is different according to the predetermined information (Hayashi: col. 10 lines 8-30). Inoue and Hayashi are combinable because they are from the same field of endeavor, i.e., embedding information in the image. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Hayashi with Inoue. The motivation for doing so is that by generating a pattern in which a dot arrangement is different according to the predetermined information will reduce the deterioration in the image quality as suggested by Hayashi at col. 10 lines 13-16. Therefore, it would have been obvious to combine Hayashi with Inoue to obtain the invention as specified in claim 1.

With regard to **claim 2** Inoue discloses quantization condition that is a quantization threshold value (quantization threshold value is either $q+1$ or $q-1$ at col. 38 lines 37-43).

With regard to **claim 3** Inoue discloses quantization condition changes the quantization threshold value based on a predetermined period (the two values $q+1$ and $q-1$ is based on the predetermined period of the information being embedded, col. 38 lines 40-46).

With regard to **claim 4** Inoue discloses control means switches the predetermined period for changing the quantization threshold value in the unit of said image area (the predetermined period for changing the threshold value is in the unit of the image area because the values are used to obtain the mean values M' and these values are related to the image area, col. 38 lines 45-59).

With regard to **claim 5** Inoue discloses control means that switches the period in a horizontal direction and the period in a vertical direction for changing the quantization threshold value in the unit of the image area. (As clearly seen in Figure 21(b) that the period is in the horizontal and vertical direction for block HL3, col. 53 lines 65-67 to col. 54 lines 1-6).

With regard to **claim 6** Inoue discloses plural kinds of the predetermined periods (i.e., horizontal and vertical) and switches the predetermined period in the unit of the image area (as clearly seen in Figs. 21(a) and 21(b)).

With regard to **claim 7** Hayashi discloses predetermined information being audio information (see, col. 24 lines 35-47).

With regard to **claim 8** Inoue discloses predetermined information being related to a copyright of the image (See, col. 39 lines 11-14).

With regard to **claim 9** it is inherent that the information embedded in the image is done in such a manner not easily visible to a human eye.

With regard to **claim 10** Inoue discloses an image processing apparatus which extracts the predetermined information (See, col. 48 lines 45-47) from the image in which the predetermined information has been embedded (See, col. 46 lines 50-67), the apparatus comprising: input means for entering the image (signal 71 in Fig. 11 is the input means which inputs the image (here the image is being entered) in the system. Col. 45 lines 66-67); transformation means (transformation means 31, col. 48 lines 51-52.) for executing frequency transformation on the image areas divided by said division means (image that is divided by division as explained in claim 1 which was first divided into different frequency bands as described in Figs. 33-35); classification means (i.e., judgment portion 22, col. 48 line 53) for classifying the image areas into plural classes based on the transformation process of said transformation means (the judgment portion 22 classifies the image based on the quantization value which was obtained thru the process of transformation and quantization means, col. 43

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lines 53-57); and extraction means for extracting the predetermined information, based on a feature amount of each class thus classified (extracting means 2b in Fig. 15, col. 48 lines 43-53).

With regard to **claim 11** Inoue discloses an orthogonal transformation 31 at col. 48 lines 51-52.

With regard to **claim 12** Inoue discloses comparison means (comparison means included in judgment portion, col. 61 lines 5-7) for comparing the feature amount of the classified classes (amount of the classified classes are compared which is obtained after the error calculation portion 65 after the transformation, col. 60 lines 37-45); wherein said extraction means extracts said predetermined information based on the result of comparison by said comparison means (See, col. 61 lines 25-35).

With regard to **claim 13** Inoue discloses evaluation means for evaluating result of evaluation (as a prior art, Inoue discloses evaluating the image using three dividing filters, see col. 1 lines 60-67, also see Fig. 21(a) part LL1, LH1, HL1, and HH1.); and re-division means for executing again the division process of said division means, based on the result of evaluation by said evaluation means (re-division on each of the evaluation part into image signal 71 representing at col. 2 lines 4-19, Fig. 21(a) part LL1, LH2, HL2, HH2, etc.).

With regard to **claim 14** Inoue discloses re-division means executing division again by changing the dividing position of the division (position of the division changed from the entire block seen in Fig. 21 to within the block LL1).

With regard to **claim 15** Inoue discloses re-division means executing division again by changing the size of division (the size of the division is changing as seen in Fig. 21. Size of LH2 is different than size of LH3, etc.).

With regard to **claim 16** Inoue discloses feature amount being an absolute value of coefficients of transformation by said transformation means (See, col. 57 lines 59-61).

Claim 18 recites identical features as claim 7 except claim 18 is apparatus for extracting claim. Thus, arguments similar to that presented above for claim 7 is equally applicable to claim 18.

Claim 19 recites identical features as claim 8. Thus, arguments similar to that presented above for claim 8 is equally applicable to claim 19.

Claim 20 recites identical features as claim 9. Thus, arguments similar to that presented above for claim 9 is equally applicable to claim 20.

Claim 21 recites identical features as claim 1 except claim 21 is a method claim. Thus, arguments similar to that presented above for claim 1 is equally applicable to claim 21.

Claim 22 recites identical features as claim 2 except claim 22 is a method claim. Thus, arguments similar to that presented above for claim 2 is equally applicable to claim 22.

Claim 23 recites identical features as claim 3 except claim 23 is a method claim. Thus, arguments similar to that presented above for claim 3 is equally applicable to claim 23.

Claim 24 recites identical features as claim 4 except claim 24 is a method claim. Thus, arguments similar to that presented above for claim 4 is equally applicable to claim 24.

Claim 25 recites identical features as claim 5 except claim 25 is a method claim. Thus, arguments similar to that presented above for claim 5 is equally applicable to claim 25.

Claim 26 recites identical features as claim 6 except claim 26 is a method claim. Thus, arguments similar to that presented above for claim 6 is equally applicable to claim 26.

Claim 27 recites identical features as claim 7 except claim 27 is a method claim. Thus, arguments similar to that presented above for claim 7 is equally applicable to claim 27.

Claim 28 recites identical features as claim 8 except claim 28 is a method claim. Thus, arguments similar to that presented above for claim 8 is equally applicable to claim 28.

Claim 29 recites identical features as claim 9 except claim 29 is a method claim. Thus, arguments similar to that presented above for claim 9 is equally applicable to claim 29.

Claim 30 recites identical features as claim 10 except claim 30 is a method claim. Thus, arguments similar to that presented above for claim 10 is equally applicable to claim 30.

Claim 31 recites identical features as claim 11 except claim 31 is a method claim. Thus, arguments similar to that presented above for claim 11 is equally applicable to claim 31.

Claim 32 recites identical features as claim 12 except claim 32 is a method claim. Thus, arguments similar to that presented above for claim 12 is equally applicable to claim 32.

Claim 33 recites identical features as claim 13 except claim 33 is a method claim. Thus, arguments similar to that presented above for claim 13 is equally applicable to claim 33.

Claim 34 recites identical features as claim 14 except claim 34 is a method claim. Thus, arguments similar to that presented above for claim 14 is equally applicable to claim 34.

Claim 35 recites identical features as claim 15 except claim 35 is a method claim. Thus, arguments similar to that presented above for claim 15 is equally applicable to claim 35.

Claim 36 recites identical features as claim 16 except claim 36 is a method claim. Thus, arguments similar to that presented above for claim 16 is equally applicable to claim 36.

Claim 38 recites identical features as claim 18 except claim 38 is a method for extracting claim. Thus, arguments similar to that presented above for claim 18 is equally applicable to claim 38.

Claim 39 recites identical features as claim 19 except claim 39 is a method claim. Thus, arguments similar to that presented above for claim 19 is equally applicable to claim 39.

Claim 40 recites identical features as claim 20 except claim 40 is a method claim. Thus, arguments similar to that presented above for claim 20 is equally applicable to claim 40.

Claim 41 recites identical features as claim 1 except claim 41 is a computer readable memory medium claim. Thus, arguments similar to that presented above for claim 1 is equally applicable to claim 41. Applicant's attention is invited to col. 63 lines 9-14 of Inoue for a computer readable memory medium.

Claim 42 recites identical features as claim 10 except claim 42 is a computer readable memory medium claim. Thus, arguments similar to that presented above for claim 10 is equally applicable to claim 42. Applicant's attention is invited to col. 63 lines 9-14 of Inoue for a computer readable memory medium.

8. Claims 17 and 37 rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (US 6,477,276) in view of Hayashi (US 6,535,616) as applied to claims 1-16 and 18-36 above, and further in view of Yuan, et al. (USPN 5,821,986) (hereinafter, "Yuan").

With regard to **claim 17** Inoue (as modified by Hayashi) discloses a feature amount as described in claim 10 and all of the claimed subject matter as already discussed above and the arguments are not repeated herein, but are incorporated by reference. Inoue does not expressly

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disclose the feature amount being electric power. Yuan discloses the feature amount being electric power (see, col. 6 lines 54-59). Inoue and Yuan are combinable because they are from the same field of endeavor, i.e., encoding/decoding the image. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Yuan with Inoue. The motivation for doing so is that Yuan suggests at col. 6 lines 54-59 that for faster calculation with less time computation power, this feature allows for communication for decoding reasons. Therefore, it would have been obvious to combine Yuan with Inoue to obtain the invention as specified in claim 17.

Claim 37 recites identical features as claim 17 except claim 37 is a method for extracting claim. Thus, arguments similar to that presented above for claim 17 is equally applicable to claim 37.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shefali D Patel whose telephone number is 703-306-4182. The examiner can normally be reached on M-F 8:00am - 5:00pm (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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DANIEL MIRIAM
PRIMARY EXAMINER

September 29, 2004

Shefali D Patel
Examiner
Art Unit 2621